

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A piezoelectric ~~Piezoelectric~~ ceramic material having a the general composition of ABO<sub>3</sub>, the piezoelectric ceramic material comprising:

~~which essentially contains~~ lead zirconate titanate having a ~~and~~ perovskite lattice structure, wherein A stands for A positions in the perovskite lattice structure and B stands for B positions in the crystal perovskite lattice structure, the lead zirconate titanate comprising ~~characterized by a composition that contains~~ at least a proportion of lead zirconate titanate of ~~the general formula~~

$\text{Pb}_{1-3x/2-y/2}\text{SE}_x \text{ }_{x/2-y/2}\text{Cu}^{\text{I}}_y(\text{Zr}_{0.5515-z}\text{Ti}_{0.4485+z})\text{O}_{3z}$ , wherein:

$0.01 < x < 0.04$  and  $0 < y < x/2$ , wherein

a value of x is from about 0.01 to about 0.04;

a value of y is from about 0 to about the value of x divided by two;

SE is a rare-earth metal [[,]] selected from the group consisting of ~~comprising~~ La, Nd, Sm, Gd, Tb, Dy, Ho, Er, Tu, Yb, Lu and Y,

~~wherein the parameter~~ x is determined by ~~the~~ a valence of the rare-earth metal, and

~~wherein the parameter~~ z is selected based on ~~upon the parameter~~ the value of y such that the piezoelectric ceramic material corresponds ~~is tailored to the~~ a morphotropic phase boundary.

2. (Currently Amended) The piezoelectric ceramic ~~Ceramic~~ material of according to claim 1, wherein ~~in which~~ Cu is ~~inserted into~~ in the perovskite lattice structure of the piezoelectric ceramic material at least partially in the A positions, ~~wherein the Cu that is inserted in A positions is present as a monovalent, positive cation Cu<sup>+</sup>.~~

3. (Currently Amended) The piezoelectric ceramic ~~Ceramic~~ material of according to claim 1, wherein the piezoelectric ceramic material comprises ~~or 2 with the composition~~  
 $\text{Pb}_{0.96}\text{Nd}_{0.02}\text{Cu}_{0.02}(\text{Zr}_{0.5515}\text{Ti}_{0.4485})\text{O}_3$ .

4. (Currently Amended) A method ~~Method~~ for producing a ceramic material according to claim ~~one of claims 1 through 3~~, the method comprising:  
preparing ~~in which a ceramic raw materials mixture containing~~ that includes copper oxide (CuO) ~~is prepared,~~  
performing a calcination of ~~in which the ceramic raw materials mixture is calcined under inert conditions, with the calcination being performed~~ in a reduced atmosphere under an oxygen partial pressure[[,]] at which Cu and ~~copper oxide~~ CuO are in equilibrium and coexist to form a calcined ceramic product,  
grinding ~~in which the calcined ceramic product;~~ is finely ground,  
homogenizing the calcined ceramic product ~~homogenized;~~ and  
sintering the calcined ceramic product. ~~then sintered.~~

5. (Currently Amended) The method of ~~Method according to~~ claim 4, wherein performing the calcination of the ceramic raw materials mixture comprises performing the calcination in which the calcination is performed in a moist nitrogen atmosphere.

6. (Currently Amended) A method ~~Method~~ for producing a ceramic material according to claim 1, one of claims 1 through 3, the method comprising:  
performing a calcination of in which a ceramic raw materials mixture without a copper oxide (CuO) additive is calcined, wherein during the calcination to form a piezoceramic perovskite mixed-crystal phase material; is formed;

adding in which ~~in which~~ copper oxide  $\text{Cu}_2\text{O}$  ~~is added~~ to a slurry, wherein the copper oxide is about evenly distributed throughout the slurry;

grinding the piezoceramic perovskite mixed-crystal phase material to form a ground material; in which the product of the calcination is finely ground and

mixing the ground material ~~mixed~~ with the slurry to form , ~~forming~~ a ceramic mass; and sintering in which ~~the ceramic mass is sintered~~ under inert conditions.

7. (Currently Amended) The method of claim 6, wherein sintering the ceramic mass comprises sintering the ceramic mass ~~Method pursuant to one of claims 4 through 6, in which the sintering is performed~~ in a moist nitrogen atmosphere.

8. (Currently Amended) A multilayer ~~Multilayer~~ piezoelectric component  
comprising:

a plurality of ~~with~~ ceramic layers comprising ~~made from a the~~ ceramic material ~~according~~  
~~to one of claims 1 through 3~~ of claim 1; and

a plurality of internal electrode layers, wherein the ceramic layers and the electrode layers  
alternate. ~~are arranged one on top of another in alternating series wherein the internal electrodes~~  
~~contain at least a proportion of the metallic copper.~~

9. (New) The piezoelectric ceramic material of claim 2, wherein the Cu inserted in  
A positions is a monovalent, positive cation Cu<sup>+</sup>.

10. (New) The method of claim 4, wherein sintering the calcined ceramic product  
comprises sintering the calcined ceramic product in a moist nitrogen atmosphere.

11. (New) The multilayer piezoelectric component of claim 1, wherein the internal  
electrode layers include at least a proportion of metallic copper.

12. (New) The multilayer piezoelectric component of claim 1, wherein a value of z is  
from about -0.15 to about +0.15.



13. (New) The multilayer piezoelectric component of claim 1, wherein a value of  $z$  is from about -0.016 to about +0.0205.

14. (New) The multilayer piezoelectric component of claim 1, wherein  $\square$  is a vacancy in a crystal lattice of the lead zirconate titanate.